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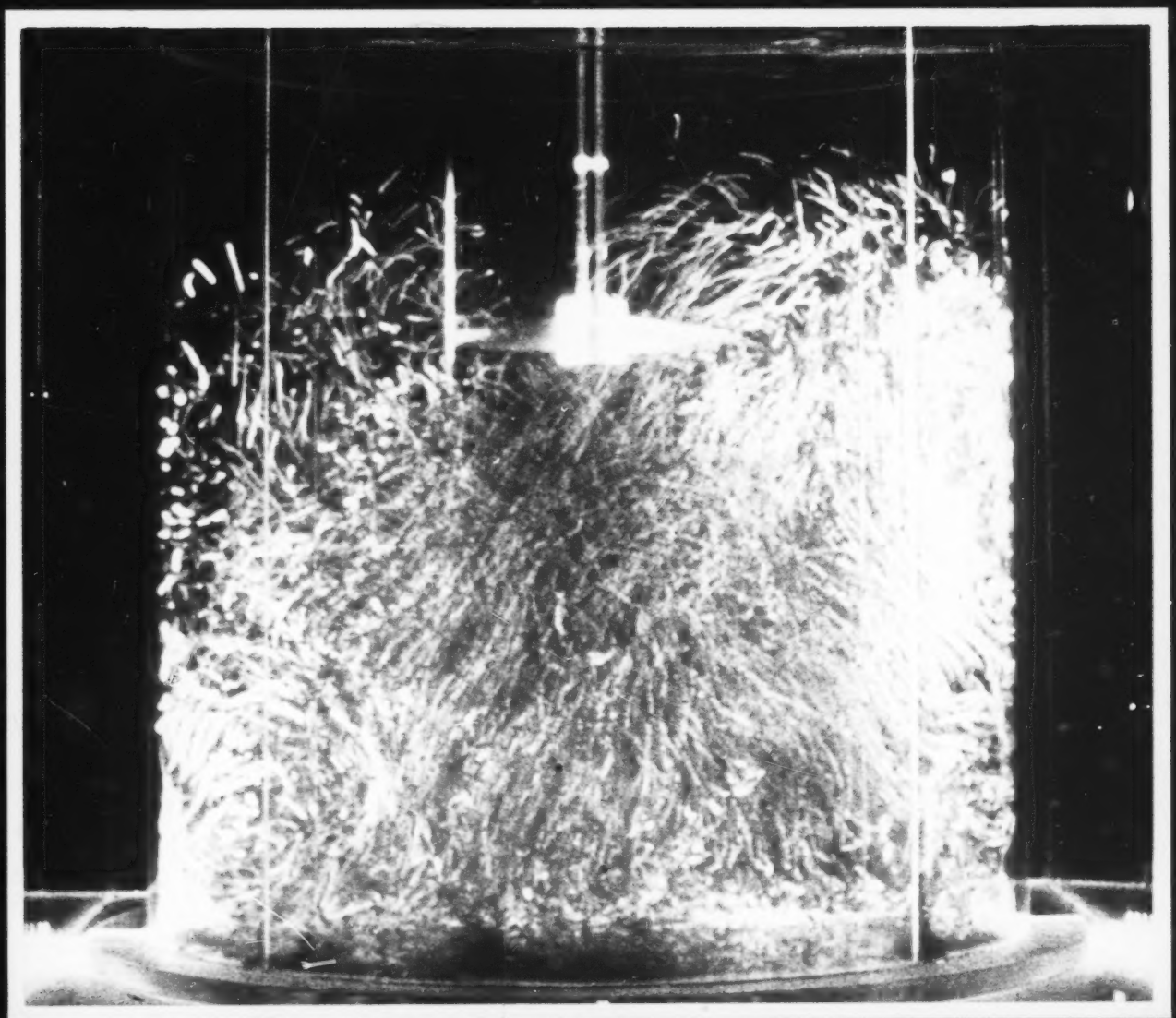
The role of fluid flow, shear rates in mixing



Textile tire materials adhesion

Titanate coupling agents

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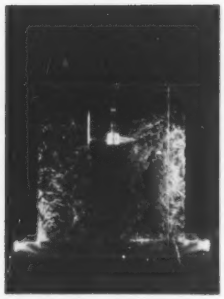

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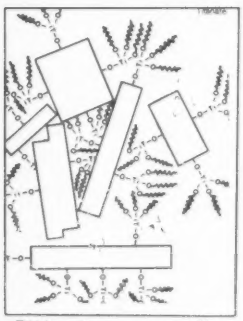

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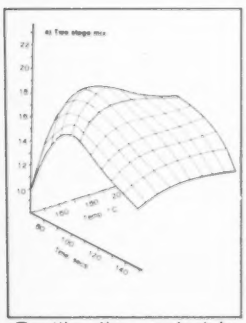

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by Jon Menough, contributing technical service editor. A look at platen insulation that is a fiberglass reinforced, mineral filled composite, that can save on energy costs.

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by J.Y. Oldshue, Mixing Equipment Co. Author discusses fluid shear stress which carries out mixing and dispersion processes, the way in which non-geometric similarity in impellers used to produce desired ratios of mixing results and their use in scale-up and scale-out techniques, and use of accurate velocity measuring equipment to determine many other fluid mechanics properties.

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Cover courtesy of Mixing Equipment Co.

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$21 million on sales of $993 million.

General Tire's net income for 1983 was $67.4 million on sales of $2.06 billion.

BFGoodrich reported 1983 net income of $18.4 million with sales of $3.2 billion.

Goodyear reported worldwide sales in 1983 totaled $9.74 billion and earnings were $305.5 million. The company's fourth quarter earnings of $142 million were the highest of any quarter in history.

Jones & Vining reported net earnings in 1983 were $1.9 million on sales of $40.0 million.

Lubrizol Corp. had earnings of $800.3 million in 1983 and net income totaled $64.7 million.

Myers Industries reported 1983 net sales were $80.6 million and net income was $3.2 million.

Park-Ohio posted a net loss for 1983 of $5.5 million. Sales were reported at $142 million.

Petrolane Inc. said first quarter net income was $3.5 million on revenues of $267.9 million.

Brad Ragan, Inc. recorded a net loss of $68,000 on revenues of $43.5 million for the third quarter.

Sybron Corp. reported 1983 earnings of $11.9 million on sales of $554.5 million.

Uniroyal reported 1983 net income of $67 million on sales of $2.04 billion.

Price changes

Akzo Chemie America's Noury Chemical group new prices for the following Trigonox products are: 23-C75($3.85/lb); 25-C75($3.35/lb); 21($3.15/lb); 21-C50($2.15/lb); 21-OP50($2.55/lb); F-C50($2.63/lb) B increased 10¢/lb and A-W70 increased 7¢/lb. On May 1, Cadet BPO 70/78 will be increased 17¢/lb and Trigonox C will be increased 21¢/lb.

Hercules increased its Dresinate and Resin 731 emulsifiers less than 4%. Prices are: Dresinate 731 is 52.5¢/lb; Dresinate 214 and 515 emulsifier are 56¢; Dresinate 554 is 59¢; Dresinate 979 is $1.26; Resin 731 D is 65¢/lb in bulk while flake 731D is 73¢. Also, Hercolube A increased 5¢/lb and Hercolube 202 is now $1.34/lb.

Markets, news

A 29% increase in original equipment shipments of passenger tires and a 2.6% increase in replacement tires shipped showed on the Rubber Manufacturers Association year end tire report. Total shipments of tires in 1983 was 182 million, an 8.6% increase over the 167.4 million shipped in 1982. Production increased 4.5% from 149.4 million to 156.2 million. In truck and bus tires there was more than a 9% increase in shipments from 33.7 million to 36.8 million and a 5% increase in production from 29 million to 30.6 million.

The recently released 1982 Census of Manufacturers shows the number of companies in the manufacture of tires and inner tubes is declining while increasing in the fabricated rubber products area. There were 100 companies in the '82 census, down from 121 in 1977 and 136 in 1972. There were 54,800 production workers in 1982 compared to 88,300 in 1977 and 83,100 in 1972. Cost of materials dropped since the 1977 census from $4.8 billion to $4.6 billion. The number of fabricated rubber products companies reached 1,170 in 1982, up from 1,127 in 1977. There were 965 companies reported in the 1972 census. The number of employees is decreasing in this area from 98,500 in 1977 to 87,100 in 1982.

The rubber industry consumed $20 million worth of chemically modified minerals in 1983 according to Charles H. Kline & Co. Treated kaolin as a partial replacement for expensive carbon black, surface modified kaolin and stearate coated calcium carbonate are increasing in usage. These areas have markets of $1 million or more per year. Modified bentonite has over a $1 million year market in adhesives and sealants markets the report stated.

RMA 1983 tire & tube shipments & production report (figures in thousands of units)

Passenger Tires	1983*	1982	% Change
Shipments			
Original Equipment	43,845	33,981	+29.03
Radial	36,599	28,415	+28.80
Replacement	133,964	130,539	+2.62
Radial	93,915	86,000	+9.20
Export	4,206	2,949	+42.62
Radial	2,899	1,521	+90.60
Total	182,015	167,469	+8.69
Radial	133,413	115,936	+15.07
Production	156,256	149,481	+4.53
Radial	109,796	102,322	+7.30
Ending Inventory	27,953	33,125	−15.61
Radial	20,333	24,946	−18.49
Truck & Bus Tires			
Shipments			
Original Equipment	5,519	4,652	+18.64
Radial	2,614	1,910	+36.86
Replacement	30,301	28,149	+7.65
Radial	10,268	8,266	+24.22
Export	1,030	966	+6.63
Radial	483	273	+76.92
Total	36,850	33,767	+9.13
Radial	13,365	10,449	+27.91
Production	30,667	29,019	+5.68
Radial	9,740	7,634	+27.59
Ending Inventory	5,387	6,830	−21.13
Radial	2,021	2,638	−23.39

*Passenger & truck & bus figures for the year are within + or − 2% of actual since RMA had to estimate company data for a portion of the reporting period.

1982 Census of Manufacturers

Year	Companies[2] (no.)	All establishments: Total (no.)	All establishments: With 20 employees or more (no.)	All employees: Number (1,000)	All employees: Payroll (million dollars)	Production workers: Number (1,000)	Production workers: Hours (millions)	Production workers: Wages (million dollars)	Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)	Ratios: Specialization (percent)	Ratios: Coverage (percent)
INDUSTRY 3011, TIRES AND INNER TUBES															
1982 Census	100	160	99	70.5	1 739.6	54.8	101.3	1 288.4	(NA)	4 603.7	9 361.1	235.6	(NA)	99	99
1977 Census	121	200	126	114.0	1 832.4	88.3	176.4	1 366.0	4 347.3	4 803.0	8 971.0	289.0	1 172.1	96	99
1972 Census	136	206	126	107.5	1 214.1	83.1	168.9	908.1	3 070.8	2 745.1	5 747.1	187.1	768.4	97	99
INDUSTRY 3069, FABRICATED RUBBER PRODUCTS, N.E.C.															
1982 Census	1 170	1 332	658	87.1	1 528.7	64.5	127.9	971.4	(NA)	3 036.9	6 193.6	205.2	(NA)	85	92
1977 Census	1 127	1 280	621	98.5	1 164.0	77.1	153.3	795.4	2 351.9	2 231.2	4 565.0	135.0	510.5	88	90
1972 Census	965	1 103	605	99.0	808.8	77.4	153.7	559.7	1 573.1	1 273.0	2 830.9	88.5	332.8	84	89